

REMARKS

This application contains claims 1-24. All of the claims were rejected in the Office Action of August 11, 2005.

With this Amendment, claims 3, 9, 11 and 18 are amended. No claims have been canceled or added, leaving claims 1-24 pending in the application, with claims 1 and 14 being independent.

Information Disclosure Statement

Applicants contend that the Information Disclosure Statement previously filed complies with 37 C.F.R. 1.97(b), having been filed prior to the first Office Action. As shown from the attached copy of the Information Disclosure Statement from Applicants' files, an Information Disclosure Statement, including Form 1449 was submitted on June 25, 2004, with a properly completed mailing certificate. Also enclosed is a copy of a postcard, sent with the Information Disclosure Statement, stamped as received by the USPTO Mail Room. The postcard identifies that an Information Disclosure Statement including Form 1449 and a copy of the references cited was received by the PTO Mail Room. Note also that the PAIR system currently shows that the Patent Office received the transmittal letter and reference cited on June 28, 2004. For whatever reason, some pages of the submission appear to have been separated from the transmittal letter and references cited. However, because the appropriate forms were transmitted, with a mailing certificate, the Information Disclosure Statement should be processed in accordance with its date of submission, June 25, 2004. No fee or certification is therefore required.

Applicants request that the Examiner initial the enclosed Form 1449 indicating that the cited references have been considered.

Claim Objections

Applicants have amended claims 3 and 18 to address the objections raised by the Examiner. The objections should therefore be withdrawn.

Claims Rejections under 35 U.S.C. §112

The Examiner rejected claims 11 and 12 for reciting a use without setting forth any steps of a method or process. Applicants contend that the claims as originally presented do recite steps of a process. However, the language of the claims has been rearranged to make clear that steps are recited. In particular, claim 11 recites a method of manufacturing a semiconductor component. The claim specifically recites a step of “performing an analysis.” Further, the claim expressly recites a step of “selecting at least one step in the manufacturing process.” Claim 12 has not been amended, but clearly recites steps in a process. Claim 12 recites such steps as “connecting,” “stimulating,” and “providing.”

Because claims 11 and 12 clearly set forth steps involved in a process, the rejection under 35 U.S.C. §112 should be withdrawn.

Claim Rejections under 35 U.S.C. §101

Claims 11-13 are rejected under 35 U.S.C. §101 because the Examiner alleges that the claims recite a use without setting forth any steps involved in a process. As described above in connection with the rejection under 35 U.S.C. §112, the claims do recite specific steps. Because the rejection is premised on the claims not reciting any steps involved in the process, the rejection should be withdrawn.

Claims Rejections under 35 U.S.C. §102

Claims 1, 2, 7, 8, 10, 14-18 and 21-23 are rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,759,864 to Patel. Applicants respectfully disagree.

The claims relate to measurements on a differential signal. In contrast, Patel describes a system and method for testing integrated circuits by transient signal analysis. As shown in FIG. 1 of

Patel, a device under test (DUT) is tested by measuring transient signals on the power supplied to the DUT. As can be seen in FIG. 1, the output of power source 18 is fed to STIC 12 which forms the signal provided to IC tester 20. As part of this testing, the DUT transient is compared to a reference transient generated by a reference IC 14. This transient signal is analyzed to detect defects in the DUT. (See, column 1, lines 32-33). Because the measurements made in Patel are made for a different reason than taught in the present application, several claim limitations are not shown or suggested in the reference.

For example, the Examiner asserts that Patel at column 6, lines 1-7 teaches the claim limitation: “introducing a plurality of bias levels into the comparison, whereby the output of the comparator is a first logical level when the value of the first input exceeds the value of the second input by the bias level.” However, the cited passage of Patel describes removing what is described in Patel to be a “bias” (see column 6, line 4) --which is not the same as introducing a bias level. Further, this removal of the “bias” is performed on both the signal from the device under test and the reference signal. In Patel, variations – or transients – on the power supplied to the device under test are analyzed. In this context, the “bias” describes the nominal value of the power supply and is removed from the signal to leave just the transient signal for processing.

Therefore, the cited passage of Patel does not describe the claimed limitation. Specifically, it does not describe “introducing” nor does it describe “a plurality of bias levels.” And, because the reference describes removing the bias level before the comparison is made, the bias level does not impact the output of the comparator –such that the reference does not describe a method “...whereby the output of the comparator is a first logical value when the value at the first input exceeds the value at the second input by the bias level.”.

Claim 1 further requires “taking a plurality of sets of samples of the output of the comparator.” The claim further requires “a set of samples for each of the bias levels.” Further, the claim recites: “each of the samples in each of the sets correlated in time to a point on the waveform.” The Examiner asserts that column 8, lines 12-18 and 30-36 of Patel describes these limitations. However, those passages describe an output waveform represented as a single,

continuous time-varying waveform. (See, waveform 77 in FIG. 11) The reference does not describe samples. Nor does it describe a plurality of sets of samples. Further, because the reference does not describe either a plurality of sets of samples or a plurality of bias levels, it cannot describe a set of samples for each of the bias levels. Likewise, because the reference does not describe a set of samples, it does not show a set of samples correlated in time to a point on the waveform.

The claim further recites “selecting a set of samples having values with a predetermined percentage of a predetermined logical value.” The Examiner asserts that Patel teaches this limitation at column 8, lines 36-48 and FIG. 12. However, the cited portions of Patel describe how an output of the system of Patel is analyzed to determine if the output was taken from a “defect-free device.” As described at column 8, line 30, processing involves a cross-correlation. FIG. 12 indicates how the cross-correlation results may be used to identify a defect-free device. There is no teaching or suggestion in the reference of processing by selecting a set of samples “with a predetermined percentage of a predetermined logical value.”

Accordingly, there are multiple limitations of claim 1 that are not shown or suggested in Patel and the rejection under 35 U.S.C. §102(e) should be withdrawn. Claims 2-13 depend from claim 1 and should be allowed for the same reasons. Furthermore, the dependent claims recite features that further distinguish over the reference. Accordingly, these claims should be allowed.

Independent claim 14 also recites limitations that distinguish over Patel. For example, the claim recites “means for biasing the comparison by a variable amount in response to a control signal.” As described above, Patel describes removing a DC component – which is described in the reference to be a “bias.” Because the reference describes removing a bias signal, the bias signal has no effect on the comparison. Nor is the bias varied in response to a control signal. Therefore, there are multiple reasons why the reference does not show or suggest the claimed “means for biasing the comparison.”

Furthermore, as described above, the output of the comparator in Patel is a single, continuous time-varying signal. (See, output 77 in FIG. 11). There is no teaching or suggestion that

the comparator of Patel has “an output providing a logical signal” as is claimed. Nor is there an indication that the comparator of Patel has a “timing input controlling the time at which a comparison is made,” also as claimed.

Because there are multiple limitations of claim 14 not shown or suggested in Patel, the rejection under 35 U.S.C. §102(3) should be withdrawn and claim 14 should be allowed.

Claims 15-24 depend from claim 14. These claims should be allowed for the same reasons. Additionally, the dependent claims recite limitations further distinguishing the reference, providing additional reasons for allowance.

Claim Rejections under 35 U.S.C. §103

Claims 3 and 9 are rejected under 35 U.S.C. §103 as being unpatentable over Patel in view of U.S. Patent 4,053,844 to Hamaoui. Applicants respectfully disagree that the references create a *prima facie* case of obviousness. Even if combined, the references do not teach or suggest every limitation of the claims.

Neither reference describes limitations of claim 3, such as “introducing a plurality of bias levels” that involves “passing a first current through a first resistor connected to the first input of the comparator and passing a second current through a second resistor connected to the second input of the comparator, with a plurality of bias levels introduced by altering the relative level of the first current and the second current.” As discussed above, Patel does not describe a plurality of bias levels. Neither does Hamaoui. Accordingly, neither teaches or suggests introducing a plurality of bias levels “by altering the relative level of the first current and the second current,” as is claimed. Therefore, claim 3 should be allowed.

As to claim 9, the cited passage of Hamaoui relates to reading a computer punch card 20. In contrast, claim 9 recites that the differential signal has a plurality of rising edges and “setting strobe times at which the comparator takes samples to be at a predetermined time relative to the start

of a rising edge.” Because neither Patel nor Hamaoui teaches or suggests taking samples, the references do not teach or suggest this limitation and claim 9 should be allowed.

Claims 11 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Patel in view of U.S. Patent 6,865,500 to Variyam et al. Applicants respectfully disagree. As described above, Patel fails to teach multiple limitations of claim 1. Accordingly, even if Patel and Variyam are combined, they would not teach all limitations of the claims. As described above, Patel does not teach limitations such as “introducing a plurality of bias levels,” “taking a plurality of sample sets” or “selecting a set of samples having values with a predetermined percentage of a predetermined logical value.” Variyam does not teach or suggest these limitations. Therefore, the rejection should be withdrawn and claims 11 and 12 should be allowed.

Claim 13 is rejected under 35 U.S.C. §103 as being unpatentable over Patel in view of Variyam and further in view of Hamaoui. Each of the references has been discussed above. None of the references shows or suggests limitations of the claims such as “introducing a plurality of bias levels,” “taking a plurality of sets of samples...for each of the bias levels” or “selecting a set of samples having values with a predetermined percentage of a predetermined logical value.” Accordingly, the rejection should be withdrawn and claim 13 should be allowed.

Claims 19, 20 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Patel in view of U.S. Patent 6,812,803 to Goergen. As discussed above, none of the references describes all of the limitations of the claims. As described above, neither Variyam nor Patel shows a comparator with “an output providing a logical signal indicating the results of a comparison,” a comparator with “a timing input controlling the time at which a comparison is made” or “means for biasing” as recited in the claims. Goergen does not show these elements. Goergen relates to a printed circuit board and therefore does not teach or suggest the elements of the automatic test system of the claim that are not shown in Patel. Therefore, the rejection should be withdrawn and claims 19, 20 and 24 should be allowed.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

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Respectfully submitted,

By 

Edmund J. Walsh

Registration No.: 32,950

WOLF, GREENFIELD & SACKS, P.C.

Federal Reserve Plaza

600 Atlantic Avenue

Boston, Massachusetts 02210-2206

(617) 646-8000

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